UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,584	01/09/2006	Mara Destro	PP/1-22811/CHM 124/PCT	4896

324 7590 12/16/2009

JoAnn Villamizar
Ciba Corporation/Patent Department
540 White Plains Road
P.O. Box 2005
Tarrytown, NY 10591

EXAMINER	
EOFF, ANCA	

ART UNIT	PAPER NUMBER
1795	

NOTIFICATION DATE	DELIVERY MODE
12/16/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

andrea.dececchis@ciba.com
deborah.pinori@ciba.com
sonny.nkansa@basf.com

Office Action Summary	Application No.	Applicant(s)	
	10/537,584	DESTRO ET AL.	
	Examiner	Art Unit	
	ANCA EOFF	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 September 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19,20 and 22-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19,20 and 22-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *09/22/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 19, 20 and 22-41 are pending in the instant application . Claims 1-18 and 21 have been cancelled.

2. The foreign priority document No. 0228647.4 filed on December 9, 2002 in the United Kingdom was received and acknowledged.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 19-20, 22-30 and 32-41 are rejected under 35 U.S.C. 103(a) as obvious over Fujikawa et al. (US Patent 5,698,373).

With regard to claim 19, Fujikawa et al. disclose a photosensitive composition comprising:

- a base resin (column 3, line 60), which is equivalent to the polymeric material of the instant application;

- a dye precursor which forms a dye upon irradiation of actinic light (column 4, lines 16-17), which is equivalent to the color former (b) of the instant application, and

- antioxidants, such as 4,4'-thio-bis (3-methyl-6-tert-butylphenol) (column 6, line 35), 2,2'-methylene bis (4-methyl-6-tert-butyl phenol) and 1,1,3-tris(2-methyl-4-hydroxy-5-tert-butylphenyl)butane (column 6, lines 48-51).

The 4,4'-thio-bis (3-methyl-6-tert-butylphenol) (column 6, line 35) is equivalent to the component (a) of the instant application, which is a compound comprising two hydroxyphenyl moieties, each carrying one bond to a linking group (-S-) and each carrying 2 alkyl substituents (methyl and tert-butyl groups).

The 2,2'-methylene bis (4-methyl-6-tertbutyl phenol) is equivalent to the component (a) of the instant application, which is a compound comprising two hydroxyphenyl moieties, each carrying one bond to a linking group – CH2- (divalent aliphatic group with 1 carbon atom) and each carrying 2 alkyl substituents (methyl and tert-butyl groups).

The 1,1,3-tris(2-methyl-4-hydroxy-5-tert-butylphenyl)butane is equivalent to the component (a) of the instant application, which is a compound comprising three hydroxyphenyl moieties, each carrying one bond to a trivalent aliphatic group with 4 carbon atoms and each carrying 2 alkyl substituents (methyl and tert-butyl groups).

While Fujikawa et al. do not specifically teach the polymer material of the instant application, it would have been obvious to one of the ordinary skill in the art at the time of the invention to obtain such material, based on Fujikawa's teachings regarding the base resin, the dye precursor and the antioxidants which may form the polymeric material.

The photosensitive composition of Fujikawa et al. may form a layer with a thickness of 100-200 microns (column 4, lines 48-54). Therefore, the limitation for the polymer material in the form of a film is met.

The limitations where the polymer material is "contained on or visibly below the surface of a protective clothing, mask or irradiation indicating tag", and "said protective clothing, mask or irradiation indicating tag undergoes an irreversible change upon exposure to irradiation" are merely intended uses and add no patentable weight to the claim.

Therefore, the photosensitive composition of Fujikawa et al. renders obvious the polymer material of the instant application.

With regard to claim 20, the limitation of "the irradiation is of higher energy than visible light and is selected from ultraviolet light, X-ray, gamma radiation and particle radiation" is merely an intended use and adds no patentable weight to the composition of claim 19.

With regard to claims 22-23 Fujikawa et al. disclose 4,4'-thio-bis (3-methyl-6-tert-butylphenol) (column 6, line 35), which is equivalent to the compound (A) of the instant application, wherein n=2, R_1 is –S-, R_2 is a methyl group, R_3 is a tertiary C_4 alkyl, R_4 and R_5 are hydrogen atoms.

The 2,2'-methylene bis (4-methyl-6-tertbutyl phenol) (column 6, lines 48-49) is equivalent to the compound (A)) of the instant application, wherein n=2, R_1 is C_1 alkylene, R_2 is a methyl group,R_2 is a tertiary C_4 group, R_4 and R_5 are hydrogen atoms.

The 1,1,3-tris(2-methyl-4-hydroxy-5-tert-butylphenyl)butane (column 6, lines 49-50) is equivalent to the compound (A) of the instant application, wherein n=3, R_1 is a trivalent C_4 group, R_2 is a methyl group, R_3 is a tertiary C_4 group, R_4 and R_5 are hydrogen atoms.

With regard to claim 24, Fujikawa et al. further disclose that the dye precursors may be spiropyrans, fluorans or triarylmethane dyes (column 4, lines 16-28).

With regard to claim 25-27, Fujikawa et al. disclose that the antioxidant is preferably in the range of 1.0 to 20 parts by weight, preferably 2 to 10 parts by weight per 1 part by weight of the dye precursor (column 7, lines 4-6) and the dye precursor is present in an amount of 0.001 to 5 parts by weight relative to the whole photosensitive composition (column 4, lines 39-47).

With regard to claim 28, Fujikawa et al. disclose that the base resin may be a polyester, which is a transparent thermoplast as evidenced by Killey (US Patent 5,342,672) in column 11, lines 15-16.

With regard to claim 29, Fujikawa et al. disclose that the base resin may be polyamides or saturated polyesters (column 3, lines 60-61).

With regard to claims 30 and 33, Fujikawa et al. disclose a photosensitive composition comprising:

a base resin (column 3, line 60), which is equivalent to the polymeric material of the instant application;

- a dye precursor which forms a dye upon irradiation of actinic light (column 4, lines 16-17), which is equivalent to the color former (b) of the instant application, and

- antioxidants, such as 4,4'-thio-bis (3-methyl-6-tert-butylphenol) (column 6, line 35), 2,2'-methylene bis (4-methyl-6-tert-butyl phenol) and 1,1,3-tris(2-methyl-4-hydroxy-5-tert-butylphenyl)butane (column 6, lines 48-51).

The 4,4'-thio-bis (3-methyl-6-tert-butylphenol) (column 6, line 35) is equivalent to the component (a) of the instant application, which is a compound comprising two hydroxyphenyl moieties, each carrying one bond to a linking group (-S-) and each carrying 2 alkyl substituents (methyl and tert-butyl groups).

The 2,2'-methylene bis (4-methyl-6-tertbutyl phenol) is equivalent to the component (a) of the instant application, which is a compound comprising two hydroxyphenyl moieties, each carrying one bond to a linking group – CH2- (divalent aliphatic group with 1 carbon atom) and each carrying 2 alkyl substituents (methyl and tert-butyl groups).

The 1,1,3-tris(2-methyl-4-hydroxy-5-tert-butylphenyl)butane is equivalent to the component (a) of the instant application, which is a compound comprising three hydroxyphenyl moieties, each carrying one bond to a trivalent aliphatic group with 4 carbon atoms and each carrying 2 alkyl substituents (methyl and tert-butyl groups).

While Fujikawa et al. do not specifically teach the polymer material of the instant application, it would have been obvious to one of the ordinary skill in the art at the time of the invention to obtain such material, based on Fujikawa's teachings regarding the base resin, the dye precursor and the antioxidants which may form the polymeric material.

Fujikawa et al. further disclose that a photosensitive layer may be formed on a metallic plate or on a plastic film (column 4, lines 48-51), equivalent to the step of placing a sample of polymer material in site to be controlled of the instant application.

Fujikawa et al. teach that the exposure is then made through a negative film and an imaged area is colored or through a positive plate so there is formed a pattern in which a non-imaged area is colored while an image area is not colored (column 5, lines 1-5).

Fujikawa et al. further disclose that the color tone may be measured by a Macbeth densitometer (column 9, lines 27 and 42), which is equivalent to the step of checking the color of the instant application.

Fujikawa et al. further show that the photosensitive composition may be exposed with an ultra-high pressure mercury vapor lamp or a chemical lamp(see Examples 1 and 2 in column 8). Fujikawa et al. do not disclose the wavelength of the radiation emitted by the ultra-high pressure mercury vapor lamp or the chemical lamp. However, it is known in the art that such lamps emit radiation with wavelengths between 300 and 400 nm, as shown by Tanaka et al. (US Patent 6,197,479) in column 6, lines 36-39.

With regard to claim 32, the limitation of "the irradiation is from ultraviolet laser or ultraviolet lamp radiation of 285 to 400 nm, electron radiation, X-ray and gamma radiation" is merely an intended use and adds no patentable weight to the composition of claim 20.

With regard to claims 34-35, Fujikawa et al. disclose 4,4'-thio-bis (3-methyl-6-tert-butylphenol) (column 6, line 35), which is equivalent to the compound (A) of the instant application, wherein n=2, R_1 is –S-, R_2 is a methyl group, R_3 is a tertiary C_4 alkyl, R_4 and R_5 are hydrogen atoms.

The 2,2'-methylene bis (4-methyl-6-tertbutyl phenol) (column 6, lines 48-49) is equivalent to the compound (A)) of the instant application, wherein n=2, R_1 is C_1 alkylene, R_2 is a methyl group,R_2 is a tertiary C_4 group, R_4 and R_5 are hydrogen atoms.

The 1,1,3-tris(2-methyl-4-hydroxy-5-tert-butylphenyl)butane (column 6, lines 49-50) is equivalent to the compound (A) of the instant application, wherein n=3, R_1 is a trivalent C_4 group, R_2 is a methyl group, R_3 is a tertiary C_4 group, R_4 and R_5 are hydrogen atoms.

With regard to claim 36, Fujikawa et al. further disclose that the dye precursors may be spiropyrans, fluorans or triarylmethane dyes (column 4, lines 16-28).

With regard to claim 37-39, Fujikawa et al. disclose that the antioxidant is preferably in the range of 1.0 to 20 parts by weight, preferably 2 to 10 parts by weight per 1 part by weight of the dye precursor (column 7, lines 4-6) and the dye precursor is present in an amount of 0.001 to 5 parts by weight relative to the whole photosensitive composition (column 4, lines 39-47).

With regard to claim 40, Fujikawa et al. disclose that the base resin may be a polyester, which is a transparent thermoplast as evidenced by Killey (US Patent 5,342,672) in column 11, lines 15-16.

With regard to claim 41, Fujikawa et al. disclose that the base resin may be polyamides or saturated polyesters (column 3, lines 60-61).

5. Claims 19, 20, 22-24 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. (US Patent 4,431,769).

With regard to claim 19, Yoshida et al. teach a binder composition suitable for heat-sensitive recording paper (column 2, lines 52-54 and column 5, lines 17-22), wherein said binder composition comprises a binder, a leuco dye and a color developer (column 5, lines 37-39).

The color developer of Yoshida et al. may be a phenolic compound, such as 2,2'-methylene-bis (4-methyl-6-tert-butyl phenol) (column 6, line 34), which is equivalent to the component (a) of the instant application, which is a compound comprising two hydroxyphenyl moieties, each carrying one bond to a linking group – CH_2- (divalent aliphatic group with 1 carbon atom) and each carrying 2 alkyl substituents (methyl and tert-butyl groups).

The binder of Yoshida et al. is a polymer (see column 3, lines 36-50) and it is equivalent to the polymeric material of the instant application.

The leuco dyes of Yoshida et al. may be triphenylmehane-based dyes and fluoran dyes (column 5, lines 45-65) and are equivalent to the color formers (b) of the instant application.

While Yoshida et al. do not specifically teach the compositions of the instant application, it would have been obvious to one of ordinary skill in the art at the time of the inventiuon to obatin such composition, based on Yoshida's teaching regarding the components of the binder composition.

Yoshida et al. show that the binder composition may form a layer (column 9, lines 4-7). Therefore, the limitation of the polymer material in form of a film is met.

The limitations where the polymer material is "contained on or visibly below the surface of a protective clothing, mask or irradiation indicating tag", and "said protective clothing, mask or irradiation indicating tag undergoes an irreversible change upon exposure to irradiation" are merely intended uses and add no patentable weight to the claim.

Therefore, the binder composition of Yoshida et al. renders obvious the polymer material of the instant application.

With regard to claim 20, the limitation of "the irradiation is of higher energy than visible light and is selected from ultraviolet light, X-ray, gamma radiation and particle radiation" is merely an intended use and adds no patentable weight to the composition of claim 19.

With regard to claims 22-23, Yoshida et al. disclose that the color developer may be 2,2'-methylene bis (4-methyl-6-tertbutyl phenol) (column 6, line 34), which is equivalent to the compound (A)) of the instant application, wherein n=2, R_1 is C_1 alkylene, R_2 is a methyl group,R_2 is a tertiary C_4 group, R_4 and R_5 are hydrogen atoms.

With regard to claim 24, the leuco dyes of Yoshida et al. may be triphenylmethane-based dyes and fluoran dyes (column 5, lines 45-65)

With regard to claim 32, the limitation of "the irradiation is from ultraviolet laser or ultraviolet lamp radiation of 285 to 400 nm, electron radiation, X-ray and gamma radiation" is merely an intended use and adds no patentable weight to the composition of claim 20.

6. Claims 19,20,22-27 and 30-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al. (US Patent 6,524,763).

With regard to claim 19, Kuroda et al. teach microcapsules comprising:

– tris(4-dimethylamino)phenyl)methane (a_1 in Table 3) and

– 2,2'-methylene-bis(4-methyl-6-tertbutyl phenol) (d_1 in Table 3) (see No.26-29 in Table 3, column 13 and column 10, lines 48-49 and 61).

Kuroda et al. further teach a composition comprising microcapsules and an ethylene-vinyl acetate copolymer resin. The composition forms a radiation sensitive layer on a white board (see Example 65 in column 10, line-column 11, line 5).

While Kuroda et al. do not specifically teach a composition comprising the microcapsules with tris(4-dimethylamino)phenyl)methane and 2,2'-methylene-bis(4-methyl-6-tertbutyl phenol) mixed with an ethylene-vinyl acetate copolymer resin and forming a radiation sensitive composition layer, it would have been obvious to one of ordinary skill in the art to use such composition, based on Kuroda's teachings regarding the compounds used for microcapsules.

A composition comprising microcapsules with tris(4-dimethylamino)phenyl)methane and 2,2'-methylene-bis(4-methyl-6-tertbutyl phenol) mixed with an ethylene-vinyl acetate copolymer resin is equivalent to the polymeric material of the instant application, wherein:

- tris(4-dimethylamino)phenyl)methane is equivalent to the color former (b) and

- 2,2'-methylene-bis(4-methyl-6-tertbutyl phenol) is equivalent to the component (a) , which is a compound comprising two hydroxyphenyl moieties, each carrying one

bond to a linking group – CH_2- (divalent aliphatic group with 1 carbon atom) and each carrying 2 alkyl substituents (methyl and tert-butyl groups).

The radiation sensitive composition of Kuroda et al. forms a layer on a white board (column 11, line 4), equivalent to the film of the instant application.

The limitations where the polymer material is "contained on or visibly below the surface of a protective clothing, mask or irradiation indicating tag", and "said protective clothing, mask or irradiation indicating tag undergoes an irreversible change upon exposure to irradiation" are merely intended uses and add no patentable weight to the claim.

Therefore, the composition of Kuroda et al. renders obvious the polymer material of the instant application.

With regard to claim 20, the limitation of "the irradiation is of higher energy than visible light and is selected from ultraviolet light, X-ray, gamma radiation and particle radiation" is merely an intended use and adds no patentable weight to the composition of claim 19.

With regard to claims 22-23, the 2,2'-methylene bis (4-methyl-6-tertbutyl phenol) of Kuroda et al. is equivalent to the compound (A)) of the instant application, wherein n=2, R_1 is C_1 alkylene, R_2 is a methyl group,R_2 is a tertiary C_4 group, R_4 and R_5 are hydrogen atoms.

With regard to claim 24, the tris(4-dimethylamino)phenyl)methane of Kuroda et al. meets the limitation for triphenylmathane dyes of the instant application.

With regard to claims 25-27, Kuroda et al. teach a mixture comprising 30 parts of microcapsules and 40 parts of an emulsion of ethylene-vinyl acetate copolymer resin with 40% solid parts (column 10, line 66-column 11, line 1).

Kuroda et al. also shows microcapsules comprising 1 part tris(4-dimethylamino)phenyl)methane and 0.5 parts 2,2'-methylene-bis(4-methyl-6-tertbutyl phenol) (see No.26-29 in Table 3, column 13).

Based on these teachings, one of ordinary skill in the art would be motivated to obtain a composition comprising 30 parts of the microcapsules in 26-29 in Table 3 and 40 parts of an emulsion of ethylene-vinyl acetate copolymer resin with 40% solid parts.

Such a composition comprises 0.91% by weight of the color former (b) and 0.45 % by weight of the compound (a).

With regard to claims 30 and 33, Kuroda et al. teach microcapsules comprising:

– tris(4-dimethylamino)phenyl)methane (a1 in Table 3) and

– 2,2'-methylene-bis(4-methyl-6-tertbutyl phenol) (d1 in Table 3) (see No.26-29 in Table 3, column 13).

Kuroda et al. further teach a composition comprising microcapsules and an ethylene-vinyl acetate copolymer resin. The composition forms a radiation sensitive layer on a white board (see Example 65 in column 10, line-column 11, line 5).

While Kuroda et al. do not specifically teach a composition comprising the microcapsules with tris(4-dimethylamino)phenyl)methane and 2,2'-methylene-bis(4-methyl-6-tertbutyl phenol) mixed with an ethylene-vinyl acetate copolymer resin and forming a radiation sensitive composition layer, it would have been obvious to one of

ordinary skill in the art to use such composition, based on Kuroda's teachings regarding the compounds used for microcapsules.

A composition comprising microcapsules with tris(4-dimethylamino)phenyl)methane and 2,2'-methylene-bis(4-methyl-6-tertbutyl phenol) mixed with an ethylene-vinyl acetate copolymer resin is equivalent to the polymeric material of the instant application, wherein:

- tris(4-dimethylamino)phenyl)methane is equivalent to the color former (b) and

- 2,2'-methylene-bis(4-methyl-6-tertbutyl phenol) is equivalent to the component (a) , which is a compound comprising two hydroxyphenyl moieties, each carrying one bond to a linking group – CH_2- (divalent aliphatic group with 1 carbon atom) and each carrying 2 alkyl substituents (methyl and tert-butyl groups).

The radiation sensitive composition of Kuroda et al. forms a layer on a white board (column 11, line 4), equivalent to the sample of polymeric material of the instant application.

Kuroda et al. further teach that the board is exposed to gamma rays (column 11, line 9).

Kuroda et al. also teach that the change of colors with low level of gamma rays (see column 8, lines 3-8 and column 11, line 9) and the change of color is irreversible (column 7, lines 66-67).

With regard to claim 31, Kuroda et al. teach that the composition is used in industrial fields for detecting ionizing radition (column 1, line 8-10). Therefore, the

radiation sensitive layer formed on a white board may be used as film on an irradiation indicating tag.

With regard to claim 32, Kuroda et al. further teach that the board is exposed to gamma rays (column 11, line 9).

With regard to claims 34-35, the 2,2'-methylene bis (4-methyl-6-tertbutyl phenol) of Kuroda et al. is equivalent to the compound (A)) of the instant application, wherein n=2, R_1 is C_1 alkylene, R_2 is a methyl group,R_2 is a tertiary C_4 group, R_4 and R_5 are hydrogen atoms.

With regard to claim 36, the tris(4-dimethylamino)phenyl)methane of Kuroda et al. meets the limitation for triphenylmethane dyes of the instant application.

With regard to claims 37-39, Kuroda et al. teach a mixture comprising 30 parts of microcapsules and 40 parts of an emulsion of ethylene-vinyl acetate copolymer resin with 40% solid parts (column 10, line 66-column 11, line 1).

Kuroda et al. also shows microcapsules comprising 1 part tris(4-dimethylamino)phenyl)methane and 0.5 parts 2,2'-methylene-bis(4-methyl-6-tertbutyl phenol) (see No.26-29 in Table 3, column 13).

Based on these teachings, one of ordinary skill in the art would be motivated to obtain a composition comprising 30 parts of the microcapsules in 26-29 in Table 3 and 40 parts of an emulsion of ethylene-vinyl acetate copolymer resin with 40% solid parts.

Such a composition comprises 0.91% by weight of the color former (b) and 0.45 % by weight of the compound (a).

Response to Arguments

7. Applicant's arguments filed on September 03, 2009 with regard to the rejection of claims 19-20 and 22-30 under 35 USC 103(a) over Fujikawa et al. (US Patent 5,698,373).have been fully considered but they are not persuasive.

On page 31 of the Remarks, the applicant argues that the essential ingredients of Fujikawa et al. are monomers, a photopolymerization initiator and a dye precursor.

The examiner would like to show that the dye precursor of Fujikawa et al. may be spiropyrans, fluoran dye precursors and bisimidazoles (column 4, lines 16-31) and are equivalent to the color formers (b) of the instant application.

The composition may further comprise an antioxidant, such as 4,4'-thio-bis(3-methyl-6-tbutylphenol), 2,2'-methylene bis(4-methyl-6-t-butylphenol) or 1,1,3-tris-(2-methyl-4-hydroxy-5-t-butylphenyl)butane (column 6, lines 23-49), which is equivalent to the compound (a) of the instant application.

The composition may further comprise a base resin (column 3, lines 59-67), which is equivalent to the polymer material of the instant application.

As claim 19 contains the transitional phrase "comprising", additional components of the composition are not excluded. Therefore, the composition of Fujikawa et al. which also comprises monomer and a photopolymerization initiator still meets the limitations of the claim.

On page 31 of the Remarks, the applicant further argues that in Fujikawa et al. the polymerization initiator acts as color developer.

The examiner agrees. However, Fujikawa et al. clearly teach that phenol-based antioxidants may be used as dark coloration preventing agents (column 6, lines 23-26). Therefore, one of ordinary skill in the art would have been motivated to include the phenol-based antioxidant in the composition of Fujimaki et al. and obtain the polymeric material of the instant application.

On pages 32-33 of the Remarks, the applicant argues that the dark coloration preventing agent may be a variety of compounds, which are structurally diverse. The applicant further argues that the preferred compounds are 4- and 8-quinolinols, which are not typical phenols due to possible tautomerism.

The examiner agrees that Fujikawa et al. teach as dark coloration preventing agents 6 types of compounds: phosphorus-based antioxidants, phenol-based antioxidants, amine-based antioxidants, benzophenone-based antioxidants, benzotriazole-based antioxidants and citric acid (see column 6, lines 23-28).

One of the sulfur-based antioxidants is 4,4'-thio-bis(3-methyl-6-t-butylphenol) (column 6, line 35) and one of the phenol-based antioxidants is 2,2'-methylene-bis-(4-methyl-6-t-butylphenol) (column 6, lines 47-49).

The 4- and 8-quinolinols are not listed as phenol-based antioxidants (column 6, lines 47-50).

The applicant further argues that the examiner has selected from a laundry list of ingredients, one which fits the present claim limitations but there is no guidance and direction from Fujikawa which teaches with enough specificity the claimed combination.

The examiner agrees that Fujikawa et al. do not give an example of a composition comprising the components of the instant application. However, the components of the composition are clearly taught by Fujikawa et al. and one of ordinary skill in the art at the time of the invention would have been motivated to obtain the composition of the instant application, based on Fujikawa's teachings regarding the components of the composition.

On page 33 of the Remarks, the applicant argues that "there is no hint that any of the dark coloring preventing agents can be used with a dye precursor on their own for developing color and the color developer role is therefore clearly with the photopolymerisation initiator".

The examiner agrees that such function is not taught. However, the instant application simply claims a polymeric material comprising the compounds (a) and (b), which are clearly taught by Fujikawa.

The role of each compound is not claimed.

Also, all the independent claims recite the transitional term "comprising", which is open-ended and allows for other components. Therefore, the composition of Fujikawa et al. which also comprises a monomer and a photopolymerization initiator still meets the limitations of for the polymer material of the instant application.

8. Applicant's arguments filed on September 03, 2009 with respect to the rejection of claims 18,20,22-24 and 32 under 35 USC 103(a) over Yoshida et al. (US Patent 4,431,769) have been fully considered but they are not persuasive.

On pages 34 of the Remarks, the applicant argues that Yoshida et al. teach a binder used for the preparation of coated paper. The applicant further argues that Yoshida et al. teach that the light sensitive recording paper comprises a binder but no 2,2'-methylene-bis(4-methyl-6-tertbutylphenol).

The examiner would like to show that Yoshida et al. teach a binder composition for paper-coating materials (abstract).

Yoshida et al. further teach that coating compositions for heat-sensitive paper comprise a binder composition, a leuco dye (color former) and a color developer (column 5, lines 36-39). The leuco dyes may be triphenylmethane-based dyes or fluoran-based dyes (see column 5, lines 45-65) and are equivalent to the color former (b) of the instant application.

The color developer which react to the color formers include phenol compound (column 6, lines 11-12), such as 2,2'-methylene-bis-(4-methyl-6-t-butylphenol) (column 6, line 34), which is equivalent to the compound (a) of the instant application.

Furthermore, in the Example 1 in column 8, in sections (1) and (2), Yoshida et al. shows a mixture comprising a binder composition comprising a copolymer (see (1)). The binder composition is mixed with a fluoran dye and p-phenylphenol, which is a color developer phenol compound.

The binder composition may form a layer (column 9, lines 4-7), equivalent to the film of the instant application.Therefore, one of ordinary skill in the art would have been motivated to mix a binder composition with a leuco dye (color former) and a phenolic color developer and then obtain the film of the instant application.

On pages 34-35 of the Remarks, the applicant argues the examiner's position "The limitations that the polymer material is in the form of a fiber, textile, nonwoven or film and is contained on or visibly below the surface of a protective clothing, mask or irradiation indicating tag" and "said protective clothing, mask or irradiation indicating tag undergoes an irreversible change upon exposure to irradiation are merely intended uses and add no patentable weight to the claim".The applicant argues that the limitation "in the form of fiber, textile, nonwoven or film is contained on or visibly below the surface of a protective clothing, mask or irradiation indicating tag" is a structural limitation.

The applicant further argues that the phrase "protective clothing, mask or irradiation indicating tag" appears again in the body of the claim and it is an indication that the polymer material is a protective clothing, mask or irradiation indicating tag.

If claim 19 is interpreted as "a polymeric material, which is a protective clothing, mask or irradiation indicating tag", as the applicant suggests, the use of the polymeric material as "protective clothing, mask or irradiation indicating tag" is still an intended use and adds no patentable weight to the claim. The binder composition of Yoshida et al. comprises all the components of the polymeric material of the instant application and, therefore, it is equivalent to it.

9. Applicant's arguments, see pages 35-37 of the Remarks filed on September 03, 2009 with respect to the rejection of claims 19-20 and 22-32 under 35 USC 103(a) over Hayashihara et al. (US Patent 5,824,715) in view of Yoshida et al. (US Patent 4,431,760) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

Conclusion

10. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on September 22, 2009 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANCA EOFF whose telephone number is (571)272-9810. The examiner can normally be reached on Monday-Friday, 6:30 AM-4:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. E./
Examiner, Art Unit 1795

/Cynthia H Kelly/

Supervisory Patent Examiner, Art Unit 1795